SEQUENCE LISTING

<110> MISHRA, LOPA

<120> GENES CODING FOR EARLY LIVER DEVELOPMENT...

<130> P04470US02/BAS

<140> US 10/695,994
<141> 2003-10-30

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<151> 1999-11-01

<150> PCT/US98/08656
<151> 1998-04-30

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<170> PatentIn version 3.0

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tcc gaa gcc gag gtg ctg cac ctc tgc cgc agc ctc gag gtg ggc acc 1772
Ser Glu Ala Glu Val Leu His Leu Cys Arg Ser Leu Glu Val Gly Thr
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gtc atg act ttg ttc tac tcc aag aag tcg cag cgg cca gaa cgg aag 1820
Val Met Thr Leu Phe Tyr Ser Lys Lys Ser Gln Arg Pro Glu Arg Lys
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acc ttc cag gtc aag ttg gag acg cgc cag atc aca tgg agc cgc ggc 1868
Thr Phe Gln Val Lys Leu Glu Thr Arg Gln Ile Thr Trp Ser Arg Gly
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gcg gac aaa atc gag ggg tcc agt aag tgc gcc cca ctc cgg cct gcc 1916
Ala Asp Lys Ile Glu Gly Ser Ser Lys Cys Ala Pro Leu Arg Pro Ala
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Ser Arg Leu Pro Ala Ser Gln Thr Leu Gly Gln Thr Phe Gly Pro Arg
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Thr Val Met Thr Leu Phe Tyr Ser Lys Lys Ser Gln Arg Pro Glu Arg
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Lys Thr Phe Gln Val Lys Leu Glu Thr Arg Gln Ile Thr Trp Ser Arg
      50                  55                  60
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Ala Ser Arg Leu Pro Ala Ser Gln Thr Leu Gly Gln Thr Phe Gly Pro
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Arg Ala Trp Arg Pro Val Ser Ala Gln Ser Leu Val Val Thr Leu Gly
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Leu Pro Gln
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atgcaactgg cctgggccta aggttgggca ta atg gag ttg cag agg aca tcc      353
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agc gtt tca ggg ccg ctg tcg ccg gcc tac acc ggg cag gtg cct tac      401
Ser Val Ser Gly Pro Leu Ser Pro Ala Tyr Thr Gly Gln Val Pro Tyr
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aac tac aac caa ctg gag gga aga ttc aaa cag ctc caa gat gag cgt      449
Asn Tyr Asn Gln Leu Glu Gly Arg Phe Lys Gln Leu Gln Asp Glu Arg
    25                  30                  35
gaa gct gta cag aag aag acc ttc acc aag tgg gtc aat tcc cac ctt      497
Glu Ala Val Gln Lys Lys Thr Phe Thr Lys Trp Val Asn Ser His Leu
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gca aga gtg tcc tgc cga atc aca gac ctg tac acg gac ctt cga gat      545
Ala Arg Val Ser Cys Arg Ile Thr Asp Leu Tyr Thr Asp Leu Arg Asp
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gga cgg atg ctc atc aag cta ctg gag gtc ctc tct gga gag agg ctg      593
Gly Arg Met Leu Ile Lys Leu Leu Glu Val Leu Ser Gly Glu Arg Leu
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cct aaa ccc act aag gga cgg atg cgg atc cac tgt ctg gag aat gtc      641
Pro Lys Pro Thr Lys Gly Arg Met Arg Ile His Cys Leu Glu Asn Val
            90                  95                  100
gac aag gct ctt caa ttc ctg aaa gag cag aga gtc cat ctt gag aac      689
Asp Lys Ala Leu Gln Phe Leu Lys Glu Gln Arg Val His Leu Glu Asn
        105                 110                 115
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Met Gly Ser His Asp Ile Val Asp Gly Asn His Arg Leu Thr Leu Gly
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gag act gaa gat aac aaa gag aaa aag tct gct aag gat gca ttg ctg    833
Glu Thr Glu Asp Asn Lys Glu Lys Lys Ser Ala Lys Asp Ala Leu Leu
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ctg tgg tgc cag atg aag aca gct ggg tac ccc aat gtc aac att cac    881
Leu Trp Cys Gln Met Lys Thr Ala Gly Tyr Pro Asn Val Asn Ile His
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aat ttc acc act agc tgg agg gat ggc atg gcc ttc aat gca ctg ata    929
Asn Phe Thr Thr Ser Trp Arg Asp Gly Met Ala Phe Asn Ala Leu Ile
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cat aaa cat cgg cct gac ctg ata gat ttt gat aaa ctg aag aaa tct    977
His Lys His Arg Pro Asp Leu Ile Asp Phe Asp Lys Leu Lys Lys Ser
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aat gca cac tac aat ctg cag aat gca ttt aac ctg gca gag cag cac   1025
Asn Ala His Tyr Asn Leu Gln Asn Ala Phe Asn Leu Ala Glu Gln His
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ctt ggc ctc act aaa ctg tta gac cct gaa gat atc agt gtg gac cac   1073
Leu Gly Leu Thr Lys Leu Leu Asp Pro Glu Asp Ile Ser Val Asp His
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cct gat gag aag tct atc atc aca tac gtg gtg act tac tac cac tac   1121
Pro Asp Glu Lys Ser Ile Ile Thr Tyr Val Val Thr Tyr Tyr His Tyr
                250                    255                    260
ttc tcc aag atg aag gcc ttg gct gtc gaa gga aag cgc att gga aag   1169
Phe Ser Lys Met Lys Ala Leu Ala Val Glu Gly Lys Arg Ile Gly Lys
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gtg ctt gat aat gct ata gaa aca gag aaa atg att gag aag tac gag   1217
Val Leu Asp Asn Ala Ile Glu Thr Glu Lys Met Ile Glu Lys Tyr Glu
280                    285                    290                    295
aca ctt gct tct gac ctt ctg gag tgg att gaa caa acc atc atc atc   1265
Thr Leu Ala Ser Asp Leu Leu Glu Trp Ile Glu Gln Thr Ile Ile Ile
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Leu Asn Asn Arg Lys Phe Ala Asn Ser Leu Val Gly Val Gln Gln Gln
                315                    320                    325
ctc caa gca ttc aac acg tac cgc aca gtg gag aaa cca cct aag ttt   1361
Leu Gln Ala Phe Asn Thr Tyr Arg Thr Val Glu Lys Pro Pro Lys Phe
                330                    335                    340
act gag aag ggg aat ttg gag gtg ctc ctt ttc gcg att cag agc aag   1409
Thr Glu Lys Gly Asn Leu Glu Val Leu Leu Phe Ala Ile Gln Ser Lys
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atg cga gcg aat aat cag aag gtc tac atg ccc cgc gag ggg aag ctc   1457
Met Arg Ala Asn Asn Gln Lys Val Tyr Met Pro Arg Glu Gly Lys Leu
360                    365                    370                    375
atc tct gac atc aac aag gcc tgg gaa aga ctg gaa aaa gca gaa cat   1505
Ile Ser Asp Ile Asn Lys Ala Trp Glu Arg Leu Glu Lys Ala Glu His
                380                    385                    390
gag aga gaa ctg gct ctg cgg aat gag ctc ata cgg cag gaa aaa ctg   1553
Glu Arg Glu Leu Ala Leu Arg Asn Glu Leu Ile Arg Gln Glu Lys Leu
                395                    400                    405
gaa caa ctc gcc cga aga ttt gat cgc aag gca gct atg agg gag aca   1601
Glu Gln Leu Ala Arg Arg Phe Asp Arg Lys Ala Ala Met Arg Glu Thr
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tgg ctg agt gaa aac cag cgt ctt gtg tct cag gac aac ttt gga ttt   1649
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Trp Leu Ser Glu Asn Gln Arg Leu Val Ser Gln Asp Asn Phe Gly Phe
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Asp Leu Pro Ala Val Glu Ala Ala Thr Lys Lys His Glu Ala Ile Glu
440                 445                 450                 455
aca gac atc gct gca tat gaa gaa cga gtt cag gcc gtg gtg gct gtg      1745
Thr Asp Ile Ala Ala Tyr Glu Glu Arg Val Gln Ala Val Val Ala Val
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gcc agg gaa ctt gaa gcc gag aac tac cat gac atc aag cgc atc aca      1793
Ala Arg Glu Leu Glu Ala Glu Asn Tyr His Asp Ile Lys Arg Ile Thr
                475                 480                 485
gcg agg aag gac aat gtc atc cgg ctc tgg gaa tac ttg ctg gaa ctg      1841
Ala Arg Lys Asp Asn Val Ile Arg Leu Trp Glu Tyr Leu Leu Glu Leu
                490                 495                 500
ctc agg gcc agg agg cag cgt ctt gag atg aac ctg gga ttg caa aag      1889
Leu Arg Ala Arg Arg Gln Arg Leu Glu Met Asn Leu Gly Leu Gln Lys
    505                 510                 515
ata ttc cag gaa atg ctt tat att atg gac tgg atg gat gaa atg aag      1937
Ile Phe Gln Glu Met Leu Tyr Ile Met Asp Trp Met Asp Glu Met Lys
520                 525                 530                 535
gtg cta ttg ctg tct caa gac tat ggc aaa cac tta ctt ggt gtt gaa      1985
Val Leu Leu Leu Ser Gln Asp Tyr Gly Lys His Leu Leu Gly Val Glu
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gac ctg tta cag aag cat gcc ctg gtt gaa gca gac att gca atc caa      2033
Asp Leu Leu Gln Lys His Ala Leu Val Glu Ala Asp Ile Ala Ile Gln
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gca gag cgt gta aga ggt gtg aat gcc tct gcc cag aag ttt gca aca      2081
Ala Glu Arg Val Arg Gly Val Asn Ala Ser Ala Gln Lys Phe Ala Thr
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Asp Gly Glu Gly Tyr Lys Pro Cys Asp Pro Gln Val Ile Arg Asp Arg
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gtt gcc cac atg gag ttc tgc tat caa gag ctt tgt cag ctg gct gcc      2177
Val Ala His Met Glu Phe Cys Tyr Gln Glu Leu Cys Gln Leu Ala Ala
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Glu Arg Arg Ala Arg Leu Glu Glu Ser Arg Arg Leu Trp Lys Phe Phe
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tgg gag atg gca gaa gag gaa ggc tgg ata cga gag aag gaa aag atc      2273
Trp Glu Met Ala Glu Glu Glu Gly Trp Ile Arg Glu Lys Glu Lys Ile
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ctg tcc tct gat gat tac ggg aaa gac ttg acc agt gtc atg cgc ctg      2321
Leu Ser Ser Asp Asp Tyr Gly Lys Asp Leu Thr Ser Val Met Arg Leu
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ctg agc aag cac cgg gca ttt gag gat gag atg agt ggc cgt agt ggc      2369
Leu Ser Lys His Arg Ala Phe Glu Asp Glu Met Ser Gly Arg Ser Gly
    665                 670                 675
cat ttt gag cag gcc att aaa gaa ggt gaa gac atg att gca gag gaa      2417
His Phe Glu Gln Ala Ile Lys Glu Gly Glu Asp Met Ile Ala Glu Glu
680                 685                 690                 695
cac ttt gga tcg gaa aag atc cgt gag aga atc att tat atc cgg gag      2465
His Phe Gly Ser Glu Lys Ile Arg Glu Arg Ile Ile Tyr Ile Arg Glu
                700                 705                 710
cag tgg gcc aac ctg gaa cag ctc tca gcc att agg aag aag cgc cta      2513
Gln Trp Ala Asn Leu Glu Gln Leu Ser Ala Ile Arg Lys Lys Arg Leu
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gag gaa gcc tca tta ctg cac cag ttc cag gct gat gct gat gat att      2561
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Asp Ala Trp Met Leu Asp Ile Leu Lys Ile Val Ser Ser Asn Asp Val
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ggc cat gat gag tac tcc acg cag tct ctg gtc aag aag cat aaa gat      2657
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760                 765                 770                 775
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Val Ala Glu Glu Ile Thr Asn Cys Arg Pro Thr Ile Asp Thr Leu His
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gag caa gcc agt gcc ctt cca caa gca cat gca gag tct cca gat gtg      2753
Glu Gln Ala Ser Ala Leu Pro Gln Ala His Ala Glu Ser Pro Asp Val
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Lys Gly Arg Leu Ala Gly Ile Glu Glu Arg Cys Lys Glu Met Ala Glu
                810                 815                 820
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Leu Thr Arg Leu Arg Lys Gln Ala Leu Gln Asp Thr Leu Ala Leu Tyr
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Gln Ala Ser Arg Val Ala Val Val Asn Gln Ile Ala Arg Gln Leu Met
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cac aat ggc cac ccc agt gaa aag gaa atc aga gct cag caa gac aaa      3089
His Asn Gly His Pro Ser Glu Lys Glu Ile Arg Ala Gln Gln Asp Lys
    905                 910                 915
ctc aac acg agg tgg agt cag ttc aga gaa ctg gtg gac agg aaa aag      3137
Leu Asn Thr Arg Trp Ser Gln Phe Arg Glu Leu Val Asp Arg Lys Lys
920                 925                 ·930                935
gat gct ctt ctg tct gcc ctg agc atc cag aac tac cac ctc gag tgc      3185
Asp Ala Leu Leu Ser Ala Leu Ser Ile Gln Asn Tyr His Leu Glu Cys
                940                 945                 950
aat gaa acc aaa tcc tgc atc cgg gag aag acc aag gtc atc gag tct      3233
Asn Glu Thr Lys Ser Cys Ile Arg Glu Lys Thr Lys Val Ile Glu Ser
                955                 960                 965
acc caa gac ctt ggc aat gac ctg gca ggt gtc atg gcc ctg cag tgc      3281
Thr Gln Asp Leu Gly Asn Asp Leu Ala Gly Val Met Ala Leu Gln Cys
                970                 975                 980
aag ctg act ggc atg gaa cga gac ttg gta gcc att gag gcg aag ctg      3329
Lys Leu Thr Gly Met Glu Arg Asp Leu Val Ala Ile Glu Ala Lys Leu
    985                 990                 995
agt gac ctg cag aaa gaa gct gag aag ctg gag tcc gag cac cct gac      3377
Ser Asp Leu Gln Lys Glu Ala Glu Lys Leu Glu Ser Glu His Pro Asp
1000                1005                1010                1015
cag gct caa gct atc ctg tct cgg ctg gcc gag atc agt gat gtg tgg      3425
Gln Ala Gln Ala Ile Leu Ser Arg Leu Ala Glu Ile Ser Asp Val Trp
                1020                1025                1030
gag gaa atg aag aca acc ctg aag aac cga gag gcc tcc ctg gga gag      3473
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Glu Glu Met Lys Thr Thr Leu Lys Asn Arg Glu Ala Ser Leu Gly Glu
          1035                1040                1045
gcc agc aag ctg cag cag ttt ctg cgg gac ttg gac gac ttc cag tct    3521
Ala Ser Lys Leu Gln Gln Phe Leu Arg Asp Leu Asp Asp Phe Gln Ser
          1050                1055                1060
tgg ctc tcc agg acc cag act gct atc gcc tca gag gac atg ccc aat    3569
Trp Leu Ser Arg Thr Gln Thr Ala Ile Ala Ser Glu Asp Met Pro Asn
          1065                1070                1075
acc ctc act gag gca gag aag ctt ctc aca cag cac gag aat atc aaa    3617
Thr Leu Thr Glu Ala Glu Lys Leu Leu Thr Gln His Glu Asn Ile Lys
1080                1085                1090                1095
aat gag atc gac aat tat gag gaa gac tac cag aag atg cgg gac atg    3665
Asn Glu Ile Asp Asn Tyr Glu Glu Asp Tyr Gln Lys Met Arg Asp Met
                    1100                1105                1110
ggc gag atg gtc acc cag ggg cag act gat gcc cag tat atg ttt ctg    3713
Gly Glu Met Val Thr Gln Gly Gln Thr Asp Ala Gln Tyr Met Phe Leu
          1115                1120                1125
cgg cag cgg ctg cag gcc tta gac act ggc tgg aat gag ctc cac aaa    3761
Arg Gln Arg Leu Gln Ala Leu Asp Thr Gly Trp Asn Glu Leu His Lys
          1130                1135                1140
atg tgg gag aac agg caa aac ctc ctc tcc cag tcc cat gcc tac cag    3809
Met Trp Glu Asn Arg Gln Asn Leu Leu Ser Gln Ser His Ala Tyr Gln
          1145                1150                1155
cag ttc ctt agg gac acc aaa caa gct gaa gct ttt ctt aat aac cag    3857
Gln Phe Leu Arg Asp Thr Lys Gln Ala Glu Ala Phe Leu Asn Asn Gln
1160                1165                1170                1175
gag tat gtt ttg gct cat act gaa atg ccc acc acc ctg gaa gga gct    3905
Glu Tyr Val Leu Ala His Thr Glu Met Pro Thr Thr Leu Glu Gly Ala
                    1180                1185                1190
gaa gca gcc att aaa aag cag gag gac ttc atg acc acc atg gat gcc    3953
Glu Ala Ala Ile Lys Lys Gln Glu Asp Phe Met Thr Thr Met Asp Ala
          1195                1200                1205
aac gag gag aag atc aat gct gtt gtg gag act ggc cga aga ctg gtg    4001
Asn Glu Glu Lys Ile Asn Ala Val Val Glu Thr Gly Arg Arg Leu Val
          1210                1215                1220
agc gat ggg aac atc aac tcc gac cgc atc cag gag aag gtg gac tct    4049
Ser Asp Gly Asn Ile Asn Ser Asp Arg Ile Gln Glu Lys Val Asp Ser
          1225                1230                1235
att gac gac aga cac agg aag aat cga gaa gca gcc agt gaa ctt ctg    4097
Ile Asp Asp Arg His Arg Lys Asn Arg Glu Ala Ala Ser Glu Leu Leu
1240                1245                1250                1255
atg agg tta aag gac aac cgt gat cta cag aag ttc ctg caa gat tgt    4145
Met Arg Leu Lys Asp Asn Arg Asp Leu Gln Lys Phe Leu Gln Asp Cys
                    1260                1265                1270
caa gag ctg tcc ctc tgg atc aat gaa aag atg ctt aca gct caa gac    4193
Gln Glu Leu Ser Leu Trp Ile Asn Glu Lys Met Leu Thr Ala Gln Asp
          1275                1280                1285
atg tct tat gat gaa gcc aga aat ctg cac agt aaa tgg tta aag cat    4241
Met Ser Tyr Asp Glu Ala Arg Asn Leu His Ser Lys Trp Leu Lys His
          1290                1295                1300
caa gca ttt atg gcg gaa ctt gca tcc aac aaa gaa tgg ctt gac aaa    4289
Gln Ala Phe Met Ala Glu Leu Ala Ser Asn Lys Glu Trp Leu Asp Lys
          1305                1310                1315
att gag aag gaa gga atg cag ctt att tca gaa aag cca gaa aca gaa    4337
Ile Glu Lys Glu Gly Met Gln Leu Ile Ser Glu Lys Pro Glu Thr Glu
1320                1325                1330                1335
gct gtg gta aag gaa aaa ctc act ggt tta cat aaa atg tgg gaa gtc    4385
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Ala Val Val Lys Glu Lys Leu Thr Gly Leu His Lys Met Trp Glu Val
              1340                1345                1350
ctt gaa tcc aca acc cag acc aag gcc cag cgg ctc ttt gat gca aat      4433
Leu Glu Ser Thr Thr Gln Thr Lys Ala Gln Arg Leu Phe Asp Ala Asn
           1355                1360                1365
aag gct gag ctt ttc aca caa agc tgc gca gat ctt gac aaa tgg cta      4481
Lys Ala Glu Leu Phe Thr Gln Ser Cys Ala Asp Leu Asp Lys Trp Leu
         1370                1375                1380
cat ggc ctg gag agc cag att caa tct gac gac tat ggc aaa gac ctt      4529
His Gly Leu Glu Ser Gln Ile Gln Ser Asp Asp Tyr Gly Lys Asp Leu
       1385                1390                1395
acc agt gtc aat att ctt ctg aaa aag caa cag atg ctg gag aat cag      4577
Thr Ser Val Asn Ile Leu Leu Lys Lys Gln Gln Met Leu Glu Asn Gln
1400                1405                1410                1415
atg gaa gtt cgg aag aaa gag atc gag gaa ctg cag agc caa gcc cag      4625
Met Glu Val Arg Lys Lys Glu Ile Glu Glu Leu Gln Ser Gln Ala Gln
              1420                1425                1430
gcg ctg agt cag gag ggg aag agc aca gat gag gtg gac agc aaa cgc      4673
Ala Leu Ser Gln Glu Gly Lys Ser Thr Asp Glu Val Asp Ser Lys Arg
           1435                1440                1445

ctt act gtg cag acc aag ttc atg gag ctt ctg gag ccc ttg agt gag      4721
Leu Thr Val Gln Thr Lys Phe Met Glu Leu Leu Glu Pro Leu Ser Glu
         1450                1455                1460
agg aag cat aac ctg tta gct tcc aag gag atc cat cag ttc aac agg      4769
Arg Lys His Asn Leu Leu Ala Ser Lys Glu Ile His Gln Phe Asn Arg
       1465                1470                1475
gat gtg gag gac gaa atc cta tgg gtt ggc gag agg atg cct ttg gca      4817
Asp Val Glu Asp Glu Ile Leu Trp Val Gly Glu Arg Met Pro Leu Ala
1480                1485                1490                1495
act tcc aca gat cat ggc cat aac ctt caa act gtg cag ctg tta ata      4865
Thr Ser Thr Asp His Gly His Asn Leu Gln Thr Val Gln Leu Leu Ile
              1500                1505                1510
aag aaa aac cag acc ctc cag aaa gaa atc cag gga cac cag cct cgt      4913
Lys Lys Asn Gln Thr Leu Gln Lys Glu Ile Gln Gly His Gln Pro Arg
           1515                1520                1525
att gat gac atc ttt gag agg agt caa aac atc atc aca gat agc agc      4961
Ile Asp Asp Ile Phe Glu Arg Ser Gln Asn Ile Ile Thr Asp Ser Ser
         1530                1535                1540
agc ctc aat gcc gag gct atc agg cag agg ctc gct gac ctg aag cag      5009
Ser Leu Asn Ala Glu Ala Ile Arg Gln Arg Leu Ala Asp Leu Lys Gln
       1545                1550                1555
ctg tgg ggg ctc ctc att gag gaa act gag aaa cgc cat aga cgg ctg      5057
Leu Trp Gly Leu Leu Ile Glu Glu Thr Glu Lys Arg His Arg Arg Leu
1560                1565                1570                1575
gag gag gca cac aag gcg cag cag tac tac ttt gat gca gct gaa gcc      5105
Glu Glu Ala His Lys Ala Gln Gln Tyr Tyr Phe Asp Ala Ala Glu Ala
              1580                1585                1590
gag gca tgg atg agt gaa cag gag ttg tac atg atg tct gag gaa aag      5153
Glu Ala Trp Met Ser Glu Gln Glu Leu Tyr Met Met Ser Glu Glu Lys
           1595                1600                1605
gcc aag gat gag cag agt gct gtc tct atg ttg aaa aag cac cag att      5201
Ala Lys Asp Glu Gln Ser Ala Val Ser Met Leu Lys Lys His Gln Ile
       1610                1615                1620
tta gag caa gct gtt gag gac tat gca gag aca gta cac cag ctc tcc      5249
Leu Glu Gln Ala Val Glu Asp Tyr Ala Glu Thr Val His Gln Leu Ser
     1625                1630                1635
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aag act agc cgg gcg ctg gtg gct gac agc cat ccc gaa agt gag cgt      5297
Lys Thr Ser Arg Ala Leu Val Ala Asp Ser His Pro Glu Ser Glu Arg
1640            1645                1650                1655
att agc atg cgg cag tca aag gtc gac aag ctg tat gct ggc ctg aag      5345
Ile Ser Met Arg Gln Ser Lys Val Asp Lys Leu Tyr Ala Gly Leu Lys
                1660                1665                1670
gac ctt gct gag gag agg aga gga aaa ctt gat gag agg cac agg ctg      5393
Asp Leu Ala Glu Glu Arg Arg Gly Lys Leu Asp Glu Arg His Arg Leu
            1675                1680                1685
ttc cag ctc aac aga gag gtg gat gac ctg gaa cag tgg atc gct gag      5441
Phe Gln Leu Asn Arg Glu Val Asp Asp Leu Glu Gln Trp Ile Ala Glu
        1690                1695                1700
agg gaa gtg gtc gca ggc tcc cat gag ttg gga cag gac tat gag cat      5489
Arg Glu Val Val Ala Gly Ser His Glu Leu Gly Gln Asp Tyr Glu His
        1705                1710                1715
gtc acg atg tta caa gaa cgg ttc cga gaa ttt gct cga gac aca gga      5537
Val Thr Met Leu Gln Glu Arg Phe Arg Glu Phe Ala Arg Asp Thr Gly
1720            1725                1730                1735
aac att ggg cag gag cgt gtg gat aca gtt aat aac atg gca gat gaa      5585
Asn Ile Gly Gln Glu Arg Val Asp Thr Val Asn Asn Met Ala Asp Glu
                1740                1745                1750
ctc atc aac tct gga cat tca gat gct gcc acc att gct gag tgg aaa      5633
Leu Ile Asn Ser Gly His Ser Asp Ala Ala Thr Ile Ala Glu Trp Lys
            1755                1760                1765
gat ggt ctc aat gaa gcc tgg gct gac ctc ctg gag ctc att gac aca      5681
Asp Gly Leu Asn Glu Ala Trp Ala Asp Leu Leu Glu Leu Ile Asp Thr
        1770                1775                1780
aga aca cag att ctt gct gcc tca tat gaa ctt cat aag ttt tac cat      5729
Arg Thr Gln Ile Leu Ala Ala Ser Tyr Glu Leu His Lys Phe Tyr His
        1785                1790                1795
gat gcc aag gag atc ttt ggc cga atc cag gac aaa cac aag aaa ctc      5777
Asp Ala Lys Glu Ile Phe Gly Arg Ile Gln Asp Lys His Lys Lys Leu

1800            1805                1810                1815
cct gag gag ctt gga aga gat caa aac act gtg gaa act tta cag aga      5825
Pro Glu Glu Leu Gly Arg Asp Gln Asn Thr Val Glu Thr Leu Gln Arg
                1820                1825                1830
atg cac acc acc ttt gag cac gac atc caa gct ctg ggc act cag gtg      5873
Met His Thr Thr Phe Glu His Asp Ile Gln Ala Leu Gly Thr Gln Val
            1835                1840                1845
agg cag ctg cag gag gat gca gct cgc ctc cag gca gcc tat gca ggg      5921
Arg Gln Leu Gln Glu Asp Ala Ala Arg Leu Gln Ala Ala Tyr Ala Gly
        1850                1855                1860
gac aag gct gat gac atc cag aag cgt gag aat gag gtc ctg gaa gcc      5969
Asp Lys Ala Asp Asp Ile Gln Lys Arg Glu Asn Glu Val Leu Glu Ala
        1865                1870                1875
tgg aag tcc ctg ctg gat gct tgt gag ggt cgc agg gtg cgg ctg gta      6017
Trp Lys Ser Leu Leu Asp Ala Cys Glu Gly Arg Arg Val Arg Leu Val
1880            1885                1890                1895
gac aca gga gac aag ttc cgc ttc ttc agc atg gtg cgt gac ctc atg      6065
Asp Thr Gly Asp Lys Phe Arg Phe Phe Ser Met Val Arg Asp Leu Met
                1900                1905                1910
ctc tgg atg gaa gat gtc atc cgg cag atc gag gcc cag gag aaa cca      6113
Leu Trp Met Glu Asp Val Ile Arg Gln Ile Glu Ala Gln Glu Lys Pro
            1915                1920                1925
cgg gat gtg tca tct gtt gaa ctg tta atg aat aat cat caa ggt atc      6161
Arg Asp Val Ser Ser Val Glu Leu Leu Met Asn Asn His Gln Gly Ile
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        1930              1935              1940
aaa gct gaa att gat gct cgt aat gac agc ttt aca gcc tgc att gag      6209

Lys Ala Glu Ile Asp Ala Arg Asn Asp Ser Phe Thr Ala Cys Ile Glu
    1945              1950              1955
ctt ggg aaa tcc ctg ctg gca cgg aaa cac tat gct tct gag gag atc      6257
Leu Gly Lys Ser Leu Leu Ala Arg Lys His Tyr Ala Ser Glu Glu Ile
1960              1965              1970              1975
aag gaa aag tta ctg cag ctg aca gag aaa aga aaa gaa atg att gac      6305
Lys Glu Lys Leu Leu Gln Leu Thr Glu Lys Arg Lys Glu Met Ile Asp
              1980              1985              1990
aag tgg gaa gac cgg tgg gag tgg tta aga ctg att ttg gag gtc cat      6353
Lys Trp Glu Asp Arg Trp Glu Trp Leu Arg Leu Ile Leu Glu Val His
          1995              2000              2005
cag ttc tca agg gat gcc agt gtg gca gag gct tgg ctg ctt gga cag      6401
Gln Phe Ser Arg Asp Ala Ser Val Ala Glu Ala Trp Leu Leu Gly Gln
      2010              2015              2020
gaa cca tac cta tcc agc cgt gaa att ggc cag agt gta gac gaa gtg      6449
Glu Pro Tyr Leu Ser Ser Arg Glu Ile Gly Gln Ser Val Asp Glu Val
      2025              2030              2035
gag aag ctt att aag cgc cat gag gcg ttt gaa aag tct gca gcg acc      6497
Glu Lys Leu Ile Lys Arg His Glu Ala Phe Glu Lys Ser Ala Ala Thr
2040              2045              2050              2055
tgg gat gag aga ttc tct gct ctg gaa agg ctg aca acg ttg gag cta      6545
Trp Asp Glu Arg Phe Ser Ala Leu Glu Arg Leu Thr Thr Leu Glu Leu
              2060              2065              2070
ctg gaa gtg cgc aga cag caa gag gaa gaa gaa aga aag agg cgg cca      6593
Leu Glu Val Arg Arg Gln Gln Glu Glu Glu Glu Arg Lys Arg Arg Pro
          2075              2080              2085
cct tct ccg gac cca aac acg aag gtt tca gag gag gct gag tcc cag      6641
Pro Ser Pro Asp Pro Asn Thr Lys Val Ser Glu Glu Ala Glu Ser Gln
      2090              2095              2100
caa tgg gat act tca aaa gga gac caa gtt tcc cag aat ggt ttg ccg      6689
Gln Trp Asp Thr Ser Lys Gly Asp Gln Val Ser Gln Asn Gly Leu Pro
      2105              2110              2115
gct gag cag gga tct cca cgg gtt agt tac cgc tct caa acg tac caa      6737
Ala Glu Gln Gly Ser Pro Arg Val Ser Tyr Arg Ser Gln Thr Tyr Gln
2120              2125              2130              2135
aac tac aaa aac ttt aat agc aga cgg aca gcc agt gac cat tca tgg      6785
Asn Tyr Lys Asn Phe Asn Ser Arg Arg Thr Ala Ser Asp His Ser Trp
              2140              2145              2150
tct gga atg tgaagttcac taccatttgt caagaaccac tctgtccaca             6834
Ser Gly Met

tcctttgacc ttttggcttc cacgtcaccc agagtgttaa aattttact taattcatag 6894
ctgtccttga tttcatattt gtttgcattt aatttatgtt tctttggatc ctcattgcct 6954
caaagc                                                            6960


<210> 4
<211> 2154
<212> PRT
<213> Mus musculus

<400> 4
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  1               5                  10                  15
Tyr Thr Gly Gln Val Pro Tyr Asn Tyr Asn Gln Leu Glu Gly Arg Phe
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                20                        25                        30
Lys Gln Leu Gln Asp Glu Arg Glu Ala Val Gln Lys Lys Thr Phe Thr
        35                        40                        45
Lys Trp Val Asn Ser His Leu Ala Arg Val Ser Cys Arg Ile Thr Asp
        50                        55                        60
Leu Tyr Thr Asp Leu Arg Asp Gly Arg Met Leu Ile Lys Leu Leu Glu
65                        70                        75                        80
Val Leu Ser Gly Glu Arg Leu Pro Lys Pro Thr Lys Gly Arg Met Arg
                        85                        90                        95
Ile His Cys Leu Glu Asn Val Asp Lys Ala Leu Gln Phe Leu Lys Glu
                100                        105                        110
Gln Arg Val His Leu Glu Asn Met Gly Ser His Asp Ile Val Asp Gly
        115                        120                        125
Asn His Arg Leu Thr Leu Gly Leu Ile Trp Thr Ile Ile Leu Arg Phe
        130                        135                        140
Gln Ile Gln Asp Ile Ser Val Glu Thr Glu Asp Asn Lys Glu Lys Lys
145                        150                        155                        160
Ser Ala Lys Asp Ala Leu Leu Leu Trp Cys Gln Met Lys Thr Ala Gly
                165                        170                        175
Tyr Pro Asn Val Asn Ile His Asn Phe Thr Thr Ser Trp Arg Asp Gly
                180                        185                        190
Met Ala Phe Asn Ala Leu Ile His Lys His Arg Pro Asp Leu Ile Asp
        195                        200                        205
Phe Asp Lys Leu Lys Lys Ser Asn Ala His Tyr Asn Leu Gln Asn Ala
        210                        215                        220
Phe Asn Leu Ala Glu Gln His Leu Gly Leu Thr Lys Leu Leu Asp Pro
225                        230                        235                        240
Glu Asp Ile Ser Val Asp His Pro Asp Glu Lys Ser Ile Ile Thr Tyr
                245                        250                        255
Val Val Thr Tyr Tyr His Tyr Phe Ser Lys Met Lys Ala Leu Ala Val
                260                        265                        270
Glu Gly Lys Arg Ile Gly Lys Val Leu Asp Asn Ala Ile Glu Thr Glu
        275                        280                        285
Lys Met Ile Glu Lys Tyr Glu Thr Leu Ala Ser Asp Leu Leu Glu Trp
        290                        295                        300
Ile Glu Gln Thr Ile Ile Ile Leu Asn Asn Arg Lys Phe Ala Asn Ser
305                        310                        315                        320
Leu Val Gly Val Gln Gln Gln Leu Gln Ala Phe Asn Thr Tyr Arg Thr
                325                        330                        335
Val Glu Lys Pro Pro Lys Phe Thr Glu Lys Gly Asn Leu Glu Val Leu
                340                        345                        350
Leu Phe Ala Ile Gln Ser Lys Met Arg Ala Asn Asn Gln Lys Val Tyr
        355                        360                        365
Met Pro Arg Glu Gly Lys Leu Ile Ser Asp Ile Asn Lys Ala Trp Glu
        370                        375                        380
Arg Leu Glu Lys Ala Glu His Glu Arg Glu Leu Ala Leu Arg Asn Glu
385                        390                        395                        400
Leu Ile Arg Gln Glu Lys Leu Glu Gln Leu Ala Arg Arg Phe Asp Arg
                405                        410                        415
Lys Ala Ala Met Arg Glu Thr Trp Leu Ser Glu Asn Gln Arg Leu Val
                420                        425                        430
Ser Gln Asp Asn Phe Gly Phe Asp Leu Pro Ala Val Glu Ala Ala Thr
        435                        440                        445
Lys Lys His Glu Ala Ile Glu Thr Asp Ile Ala Ala Tyr Glu Glu Arg
        450                        455                        460
Val Gln Ala Val Val Ala Val Ala Arg Glu Leu Glu Ala Glu Asn Tyr
465                        470                        475                        480
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His Asp Ile Lys Arg Ile Thr Ala Arg Lys Asp Asn Val Ile Arg Leu
            485   490   495
Trp Glu Tyr Leu Leu Glu Leu Leu Arg Ala Arg Arg Gln Arg Leu Glu
            500   505   510
Met Asn Leu Gly Leu Gln Lys Ile Phe Gln Glu Met Leu Tyr Ile Met
            515   520   525
Asp Trp Met Asp Glu Met Lys Val Leu Leu Leu Ser Gln Asp Tyr Gly
            530   535   540
Lys His Leu Leu Gly Val Glu Asp Leu Leu Gln Lys His Ala Leu Val
545   550   555   560
Glu Ala Asp Ile Ala Ile Gln Ala Glu Arg Val Arg Gly Val Asn Ala
                565   570   575
Ser Ala Gln Lys Phe Ala Thr Asp Gly Glu Gly Tyr Lys Pro Cys Asp
                580   585   590
Pro Gln Val Ile Arg Asp Arg Val Ala His Met Glu Phe Cys Tyr Gln
            595   600   605
Glu Leu Cys Gln Leu Ala Ala Glu Arg Arg Ala Arg Leu Glu Glu Ser
            610   615   620
Arg Arg Leu Trp Lys Phe Phe Trp Glu Met Ala Glu Glu Glu Gly Trp
625   630   635   640
Ile Arg Glu Lys Glu Lys Ile Leu Ser Ser Asp Asp Tyr Gly Lys Asp
                645   650   655
Leu Thr Ser Val Met Arg Leu Leu Ser Lys His Arg Ala Phe Glu Asp
                660   665   670
Glu Met Ser Gly Arg Ser Gly His Phe Glu Gln Ala Ile Lys Glu Gly
            675   680   685
Glu Asp Met Ile Ala Glu Glu His Phe Gly Ser Glu Lys Ile Arg Glu
            690   695   700
Arg Ile Ile Tyr Ile Arg Glu Gln Trp Ala Asn Leu Glu Gln Leu Ser
705   710   715   720
Ala Ile Arg Lys Lys Arg Leu Glu Glu Ala Ser Leu Leu His Gln Phe
                725   730   735
Gln Ala Asp Ala Asp Asp Ile Asp Ala Trp Met Leu Asp Ile Leu Lys
                740   745   750
Ile Val Ser Ser Asn Asp Val Gly His Asp Glu Tyr Ser Thr Gln Ser
            755   760   765
Leu Val Lys Lys His Lys Asp Val Ala Glu Glu Ile Thr Asn Cys Arg
            770   775   780
Pro Thr Ile Asp Thr Leu His Glu Gln Ala Ser Ala Leu Pro Gln Ala
785   790   795   800
His Ala Glu Ser Pro Asp Val Lys Gly Arg Leu Ala Gly Ile Glu Glu
                805   810   815
Arg Cys Lys Glu Met Ala Glu Leu Thr Arg Leu Arg Lys Gln Ala Leu
            820   825   830
Gln Asp Thr Leu Ala Leu Tyr Lys Met Phe Ser Glu Ala Asp Ala Cys
            835   840   845
Glu Leu Trp Ile Asp Glu Lys Glu Gln Trp Leu Asn Asn Met Gln Ile
            850   855   860
Pro Glu Lys Leu Glu Asp Leu Glu Val Ile Gln His Arg Phe Glu Ser
865   870   875   880
Leu Glu Pro Glu Met Asn Asn Gln Ala Ser Arg Val Ala Val Val Asn
                885   890   895
Gln Ile Ala Arg Gln Leu Met His Asn Gly His Pro Ser Glu Lys Glu
                900   905   910
Ile Arg Ala Gln Gln Asp Lys Leu Asn Thr Arg Trp Ser Gln Phe Arg
            915   920   925
Glu Leu Val Asp Arg Lys Lys Asp Ala Leu Leu Ser Ala Leu Ser Ile

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      930                 935                 940
Gln Asn Tyr His Leu Glu Cys Asn Glu Thr Lys Ser Cys Ile Arg Glu
945                 950                 955                 960
Lys Thr Lys Val Ile Glu Ser Thr Gln Asp Leu Gly Asn Asp Leu Ala
              965                 970                 975
Gly Val Met Ala Leu Gln Cys Lys Leu Thr Gly Met Glu Arg Asp Leu
          980                 985                 990
Val Ala Ile Glu Ala Lys Leu Ser Asp Leu Gln Lys Glu Ala Glu Lys
          995                1000                1005
Leu Glu Ser Glu His Pro Asp Gln Ala Gln Ala Ile Leu Ser Arg Leu
     1010                1015                1020
Ala Glu Ile Ser Asp Val Trp Glu Glu Met Lys Thr Thr Leu Lys Asn
1025                1030                1035                1040
Arg Glu Ala Ser Leu Gly Glu Ala Ser Lys Leu Gln Gln Phe Leu Arg


               1045                1050                1055
Asp Leu Asp Asp Phe Gln Ser Trp Leu Ser Arg Thr Gln Thr Ala Ile
          1060                1065                1070
Ala Ser Glu Asp Met Pro Asn Thr Leu Thr Glu Ala Glu Lys Leu Leu
     1075                1080                1085
Thr Gln His Glu Asn Ile Lys Asn Glu Ile Asp Asn Tyr Glu Glu Asp
     1090                1095                1100
Tyr Gln Lys Met Arg Asp Met Gly Glu Met Val Thr Gln Gly Gln Thr
1105                1110                1115                1120
Asp Ala Gln Tyr Met Phe Leu Arg Gln Arg Leu Gln Ala Leu Asp Thr
              1125                1130                1135
Gly Trp Asn Glu Leu His Lys Met Trp Glu Asn Arg Gln Asn Leu Leu
          1140                1145                1150
Ser Gln Ser His Ala Tyr Gln Gln Phe Leu Arg Asp Thr Lys Gln Ala
          1155                1160                1165
Glu Ala Phe Leu Asn Asn Gln Glu Tyr Val Leu Ala His Thr Glu Met
     1170                1175                1180
Pro Thr Thr Leu Glu Gly Ala Glu Ala Ala Ile Lys Lys Gln Glu Asp
1185                1190                1195                1200
Phe Met Thr Thr Met Asp Ala Asn Glu Glu Lys Ile Asn Ala Val Val
              1205                1210                1215
Glu Thr Gly Arg Arg Leu Val Ser Asp Gly Asn Ile Asn Ser Asp Arg
          1220                1225                1230
Ile Gln Glu Lys Val Asp Ser Ile Asp Asp Arg His Arg Lys Asn Arg
          1235                1240                1245
Glu Ala Ala Ser Glu Leu Leu Met Arg Leu Lys Asp Asn Arg Asp Leu
     1250                1255                1260
Gln Lys Phe Leu Gln Asp Cys Gln Glu Leu Ser Leu Trp Ile Asn Glu
1265                1270                1275                1280
Lys Met Leu Thr Ala Gln Asp Met Ser Tyr Asp Glu Ala Arg Asn Leu
              1285                1290                1295
His Ser Lys Trp Leu Lys His Gln Ala Phe Met Ala Glu Leu Ala Ser
          1300                1305                1310
Asn Lys Glu Trp Leu Asp Lys Ile Glu Lys Glu Gly Met Gln Leu Ile
     1315                1320                1325
Ser Glu Lys Pro Glu Thr Glu Ala Val Val Lys Glu Lys Leu Thr Gly
     1330                1335                1340
Leu His Lys Met Trp Glu Val Leu Glu Ser Thr Thr Gln Thr Lys Ala
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Ala Asp Leu Asp Lys Trp Leu His Gly Leu Glu Ser Gln Ile Gln Ser
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Val Leu Ser Gly Glu Arg Leu Pro Lys Pro Thr Lys Gly Arg Met Arg
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Ile His Cys Leu Glu Asn Val Asp Lys Ala Leu Gln Phe Leu Lys Glu
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Gln Arg Val His Leu Glu Asn Met Gly Ser His Asp Ile Val Asp Gly
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Asn His Arg Leu Thr Thr Leu Glu Leu Leu Glu Val Arg Arg Gln Gln
    130   135   140

Glu Glu Glu Glu Arg Lys Arg Arg Pro Pro Ser Pro Asp Pro Asn Thr
145   150   155   160

Lys Val Ser Glu Glu Ala Glu Ser Gln Gln Trp Asp Thr Ser Lys Gly
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Asp Gln Val Ser Gln Asn Gly Leu Pro Ala Glu Gln Gly Ser Pro Arg
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Ser Lys Arg Ser Arg Ser Pro Phe Ala Ser Thr Arg Arg Arg Trp Asp
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Asp Ser Glu Ser Ser Gly Ala Ser Leu Ala Val Glu Ser Glu Asp Tyr
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tcc agg tgg cgg gat gct gcc gat gct gag gag gct cat gcc gag ggc      543
Ser Arg Trp Arg Asp Ala Ala Asp Ala Glu Glu Ala His Ala Glu Gly
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Leu Ala Arg Arg Gly Arg Gly Glu Ala Ala Ser Ser Ser Glu Pro Arg
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tat gct gaa gac cag gat gcc agg agt gaa caa gcg aag gca gac aaa      639
Tyr Ala Glu Asp Gln Asp Ala Arg Ser Glu Gln Ala Lys Ala Asp Lys
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gtg cca aga cgg cgg cga acc atg gca gac cct gac ttc tgg gca tac      687
Val Pro Arg Arg Arg Arg Thr Met Ala Asp Pro Asp Phe Trp Ala Tyr
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acc gac gat tac tac cga tac tac gag gaa gat tct gac agc gac aaa      735
Thr Asp Asp Tyr Tyr Arg Tyr Tyr Glu Glu Asp Ser Asp Ser Asp Lys
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gag tgg atg gct gcc ctg cgc agg aag tac cga agc cga gag caa ccc      783
Glu Trp Met Ala Ala Leu Arg Arg Lys Tyr Arg Ser Arg Glu Gln Pro
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cag tcc tcc agc gga gaa agc tgg gag ctt ctg cca gga aag gaa gaa      831
Gln Ser Ser Ser Gly Glu Ser Trp Glu Leu Leu Pro Gly Lys Glu Glu
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ctg gaa cgt cag caa gcc gga gct ggg agc ctc gcc agt gct ggc agc      879
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aat ggc agt ggt tat cct gaa gaa gta caa gac cca tct ctt cag gag      927
Asn Gly Ser Gly Tyr Pro Glu Glu Val Gln Asp Pro Ser Leu Gln Glu
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gaa gaa cag gcc tct ctg gaa gaa gga gaa atc cct tgg ctt cgc tac      975
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gat gac tcc agc gtg agc gaa gac ctc gaa gtg gac tgg agc ctg ttt    1119
Asp Asp Ser Ser Val Ser Glu Asp Leu Glu Val Asp Trp Ser Leu Phe
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gat ggg ttt gcc gat ggc ttg gga gtg gcc gaa gcc atc tcc tac gtg    1167
Asp Gly Phe Ala Asp Gly Leu Gly Val Ala Glu Ala Ile Ser Tyr Val
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gat cct cag ttc ctc acc tac atg gct ctg gaa gag cgt ctg gcc cag    1215
Asp Pro Gln Phe Leu Thr Tyr Met Ala Leu Glu Glu Arg Leu Ala Gln
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gca atg gag acg gcc ctg gca cac ttg gag tct ctc gcc gtt gat gtc    1263
Ala Met Glu Thr Ala Leu Ala His Leu Glu Ser Leu Ala Val Asp Val
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gaa gtg gcc aac cca cca gca agc aag gag agc att gat gcc ctt cct    1311
Glu Val Ala Asn Pro Pro Ala Ser Lys Glu Ser Ile Asp Ala Leu Pro
315                 320                 325                 330

gag atc ctg gtc acc gaa gat cat ggt gca gtg ggc cag gaa atg tgc    1359
Glu Ile Leu Val Thr Glu Asp His Gly Ala Val Gly Gln Glu Met Cys
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tgt cct atc tgc tgc agc gaa tat gtg aag ggg gag gtg gca act gag    1407
Cys Pro Ile Cys Cys Ser Glu Tyr Val Lys Gly Glu Val Ala Thr Glu
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cta cca tgc cac cac tat ttc cac aag ccc tgc gtg tcc atc tgg ctt    1455
Leu Pro Cys His His Tyr Phe His Lys Pro Cys Val Ser Ile Trp Leu
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cag aag tct ggc acc tgc cca gtg tgc cgc tgc atg ttc cct ccc ccg    1503
Gln Lys Ser Gly Thr Cys Pro Val Cys Arg Cys Met Phe Pro Pro Pro
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Leu
395


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Gly Glu Ala Ala Ser Ser Ser Glu Pro Arg Tyr Ala Glu Asp Gln Asp
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Ala Arg Ser Glu Gln Ala Lys Ala Asp Lys Val Pro Arg Arg Arg Arg
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Thr Met Ala Asp Pro Asp Phe Trp Ala Tyr Thr Asp Asp Tyr Tyr Arg
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Tyr Tyr Glu Glu Asp Ser Asp Ser Asp Lys Glu Trp Met Ala Ala Leu
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Arg Arg Lys Tyr Arg Ser Arg Glu Gln Pro Gln Ser Ser Ser Gly Glu
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Ser Trp Glu Leu Leu Pro Gly Lys Glu Glu Leu Glu Arg Gln Gln Ala
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Gly Ala Gly Ser Leu Ala Ser Ala Gly Ser Asn Gly Ser Gly Tyr Pro
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Glu Glu Val Gln Asp Pro Ser Leu Gln Glu Glu Glu Gln Ala Ser Leu
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Ser Glu Gly Asp Asn Glu Ser Thr His Glu Leu Ile Gln Pro Gly Met
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Tyr Met Ala Leu Glu Glu Arg Leu Ala Gln Ala Met Glu Thr Ala Leu
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Ala His Leu Glu Ser Leu Ala Val Asp Val Glu Val Ala Asn Pro Pro
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Ala Ser Lys Glu Ser Ile Asp Ala Leu Pro Glu Ile Leu Val Thr Glu
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Glu Tyr Val Lys Gly Glu Val Ala Thr Glu Leu Pro Cys His His Tyr
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ctacgaggat tttcttgcag ccttcccgaa gcagaatctt caagttataa tcttgcagaa 960
ttttaaccaa ggaatctctc aaattgggaa tctccattcc ttccttaatt cggtggataa 1020
gtagaatcgg gtccacatgt gtgccaatgt tgttcaacaa gccagtgata aatggtggtt 1080
tgtcgatgga gtatagaatc agatcttctc gtgccgaatt c              1121
```

<210> 14
<211> 779
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222>
<223> n=a or c or t or g

<400> 14

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ctcgagagat gccccacagt ccctcaggac ccgagtcagg taatctgcct ttggccttag 60
tgacctcctt ttctgggcga gtataccatc cactttcctc cctgacaggc agttcagtaa 120
cccaaccctt tcattcctcc ttcagttgtc aaagacaact taacatccaa gactaacaag 180
caagatgact caggagcatg gnctctgggt tcccctggca ccatgcatgg tgatgctagt 240
taaggctgac ttagctctta gcaaccttgg ttgggatagc ttaagctcat ctccactttc 300
ctaccaaaca gaaaagaatt tgagtcctct tgctatgagg ctctcgctcc catctcaggc 360
gagcttcctg cccctcaccc aagcttggga ggtagagtta tggagagggc aaggaagcag 420
gactggaaag atagacttat ggatccacca ctcataaagt cacaaagtcc cctcacacct 480
gctagactta gactctaaat cattacgttg tcaccaacag aggtgactcc tcaaccacaa 540
gagcctgtag tgagcttcaa gagagaagag gacaagncag acctggactg catgaccttg 600
cacctgtgat gaagtcacag caataggtga tgctcaaaaa gccccaataa aatgcaagac 660
agncaaacag aagccctgtc tgtccccatt ggtgggtaat gtagctgatg tggctggttc 720
tccttccttg acttcaccct gactatggga attgtccttc agtgcctcgt gccgaattc 779
```

<210> 15
<211> 981
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222>
<223> n=(a or c or t or g)

<400> 15

```
ctcgagaggt gaaggcagaa gtatcacaag ttcaagttca aggncagcct gggcttcaca 60
agacccaaaa aaataaatat gaggncagtc caggctggga ctcaggtcac tgctgtgctg 120
agccatcgtc agagaagttt cttctttnnt tttgatagga gctaacacag cgacccacan 180
ctggacagnc tgcagtgagt gagtgagtaa gtgacctaaa agtgatgtct tcattaatct 240
cccctcccca ggcntcaggg agctctgagg aagaggaggc agaaagatgg tgagagccag 300
caggatggga ggacaccaag gaagcagtgt cttccgacac aacaggactg gcatttagga 360
agtcacagag gctgtggctg cccagggcct gcacggtcca agctggctga gattccagtg 420
ctgagagaga caattcaaca cggnctccca cccctagnca agaagttatc tccaactgat 480
atccacttgc aaaggaaaaa attaggggggn tagagagatg gctcagtggn taagagcact 540
gacttanaaa atagaaatng canattngnt nngangttng cnaaatngct gagaaatggc 600
caattggctg gaaaacttgc aacattgcct ggagaactgc caaattgcct ggagagctgc 660
caaattggcc tggagagctg cctacatggc ctggagagct gcccacatgg cctggagaac 720
tggctacatg tcctggagag ctgccaacat gtcctggaga tctgcctaca tggcctggag 780
aactgcctac atgacctgga gagctggcca catggcctgg agagctggct acatgacctg 840
gagagctgnc tacatggcct ggagagctgg ctacatggcc tggagagctg gctacatggc 900
ctggagagct ggctacatgg cctggagagc tggctacatg gcctggagag cctcccagca 960
aggcctctct aagccgaatt c                                          981
```

<210> 16
<211> 685
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222>
<223> n=(a or c or t or g)

<400> 16

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ctcgagatgc attaaagctt tgntgcagaa ggatccgagt gtgtcctgtg tgtgtgtcct 60
```

```
cactggcgag accctttatc acacagggac accccttagg ttggagtttt ccttgtaatg 120
tccactatac gtctgcttta tacaataata ttgnttaaat ttgnctctat catgaaatac 180
ctcactttcc ttatctgtat tgattgaaag ttttggtgga tgtaatagtt tgggcttgga 240
tctgaagtct tttagagttt attggacatg tgcctngatt cattggnttn aaaatcntcc 300
acnacttggg ggtgtaaagg ttacccacnc nattantgga ggttcttctg agttccagag 360
anaangantg agccaccngg aattctccct aaacacactt tgatcatttc ctgcctaacc 420
ctgcagagga aatattaata ccctgtagta ccaaaggaaa caaataagaa ggaagactgn 480
tctctcatgt ctggaggaag tttggtgaag gagtcttctg tttgctcaca taggagagat 540
ctaatacagc cactatccat aattaaaaat ctctgtgaga gaggcatgac gaggttctcc 600
cagtctgtca agggatgtga atatgtgttn ccctgtcatc ctgtcatgaa gcctctcttt 660
ctctctctct cctcgtgccg aattc                                   685
```

<210> 17
<211> 471
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222>
<223> n=(a or c or t or g)

<400> 17
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gaattcngcn ttggggtaca tggaccngga gagcttggnt acatggcctg gagagctggn 60
tacatggccc ggngagctgg tttnataaac ctggggangt tgggttnaat ggccccgggg 120
angtnggttn aatanaccng gggaggtgtc tgaaaanagt ggncacgtac tgttctcaga 180
cccagnggaa gncatcagag tcccctgggg ttggaattaa agatgtttgt gagtcnctgc 240
gtgtatcctg gacttcaaac ccgggtcttc ttcaagagca gccagtgctc ttaaccactg 300
agggatctct ccagcctcat cgctgattta ggaaggactt ttactgattt ggagtanctg 360
tagccaatnc agtctatgac gatttccttt tagcagttct tgtttgtttt cttaatgata 420
gccatactga ttgctgagat ttacagcagc actagcaagc tggaactcga g         471
```

<210> 18
<211> 467
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222>
<223> n=(a or c or t or g)

<400> 18
```
ctcgagnttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt 60
tttttnnnnn aanaaanttt taaagttttt tttttttttat naaaannttt ccaaggggggg 120
gangggttag aaganagcca nagcctggnc cccctgcca gaaaaaacca gaggggggtt 180
gatgtccccca agtccagttg tcaccctgaa gaagttcccc acgatttccc tggtggcccc 240
ccgggagtac gtccagagtg tcacccttttc catttgggag ctgtgggaag gngtgggnt 300
ccctcccagn ggggccccaa acccttctcc tgaacagntc ctgatttctg accatctttc 360
caattccacg gattcaaaga gcatgaccct aggtaagcaa gccaggtcaa gagcattgct 420
tgtctgnagg aaaaggaagg gtccctcctg gcctcgtgcc gaattcc           467
```

<210> 19
<211> 13
<212> PRT
<213> Mus musculus

<400> 19

Glu Leu Gln Arg Thr Ser Ser Val Ser Gly Pro Leu Ser
1   5   10

<210> 20
<211> 14
<212> PRT
<213> Mus musculus

<400> 20

Phe Asn Ser Arg Arg Thr Ala Ser Asp His Ser Trp Ser Gly
1   5   10

<210> 21
<211> 13
<212> PRT
<213> Mus musculus

<400> 21

Leu Arg Arg Lys Tyr Arg Ser Arg Glu Gln Pro Gln Ser
1   5   10

<210> 22
<211> 18
<212> PRT
<213> Mus musculus

<400> 22

Ser Ala Gln Ser Leu Val Val Thr Leu Gly Arg Val Glu Gly Gly Ile
1   5   10   15

Arg Val

<210> 23
<211> 19
<212> PRT
<213> Mus musculus

<400> 23

Cys Ser Ala Gln Ser Leu Val Val Thr Leu Gly Arg Val Glu Gly Gly
1   5   10   15

Ile Arg Val

<210> 24
<211> 17
<212> PRT
<213> Mus musculus

<400> 24

Lys Ile Glu Gly Ser Ser Lys Cys Ala Pro Leu Arg Pro Ala Ser Arg
1   5   10   15

Leu

<210> 25
<211> 17
<212> PRT
<213> Mus musculus

<400> 25

Cys Ala Pro Leu Arg Pro Ala Ser Arg Leu Pro Ala Ser Gln Thr Leu
1   5   10   15

Gly

<210> 26
<211> 16
<212> PRT
<213> Mus musculus

<400> 26

Pro Pro Arg Glu Tyr Arg Ala Ser Gly Ser Arg Arg Gly Met Ala Tyr
1   5   10   15

<210> 27
<211> 17
<212> PRT
<213> Mus musculus

<400> 27

Pro Pro Arg Glu Tyr Arg Ala Ser Gly Ser Arg Arg Gly Met Ala Tyr
1   5   10   15
Cys

<210> 28
<211> 16
<212> PRT
<213> Mus musculus

<400> 28

Cys Lys Val Pro Arg Arg Arg Thr Met Ala Asp Pro Asp Phe Trp
1   5   10   15